

IN THE CLAIMS:

Please AMEND claim 1 as follows.

Please ADD claims 61-78 as follows

1. (Currently Amended) In a data transmission system including a station which transmits a plurality of M encoded data streams using a plurality of M antennas to a terminal and a station controller which controls the station, ~~wherein M is an integer at least equal to 2,~~ the terminal comprising:

at least one radio transceiver including a plurality of P radio receivers and at least one transmitter ~~with P being an integer at least equal to 2,~~ each radio receiver including an antenna which receives the plurality of M encoded data streams and a detecting function which decodes the plurality of M encoded data streams into decoded data; and

a terminal controller which controls the at least one radio transceiver, ~~and~~

wherein in response to a transmission from the station that the terminal is to operate at least one of the radio receivers in at least one frequency band not used to receive the plurality of M encoded data streams during at least one identified data frame therein to measure a radio indicator of the at least one frequency band not used to receive the plurality of M encoded data streams, the terminal controller causes at least one of the radio receivers to be tuned to the at least one frequency band during the at least one identified data frame, ~~and~~ to make measurements therein and to transmit the measurements with the at least one transmitter of the at least one radio transceiver to the station and to adjust the meaning of feedback sent in an uplink direction accordingly to

correspond to a resulting less than the plurality of data streams prior to a resulting non-MIMO transmission.

Claims 2-60 (Cancelled)

61 (New) The terminal in accordance with claim 1, wherein the at least one frequency band is an inter-frequency band in the data transmission system.

62. (New) The terminal in accordance with claim 1, wherein the at least one frequency band is in another system than the data transmission system.

63. (New) The terminal in accordance with claim 1, wherein the station comprises a demultiplexer which demultiplexes an input data stream into a plurality of substreams, each substream is spread with one of a plurality spreading codes with a mutually orthogonal pilot symbol being added to a common pilot channel transmitted by each antenna; and wherein

the at least one transceiver comprises in each radio receiver a despreader coupled to the antenna, a space-time rake combiner which receives outputs from the despreaders, a channel estimation function coupled to each of the antennas of the radio receivers which provides a channel estimation to the space-time rake combiner, a detector is coupled to outputs of the space-time rake combiner which provides outputs of the

plurality of data streams, and a multiplexer, coupled to the outputs of the detector which outputs a multiplexed data stream corresponding to the input data stream.

64. (New) The terminal in accordance with claim 61, wherein the station comprises a demultiplexer which demultiplexes an input data stream into a plurality of substreams, each substream is spread with one a plurality of spreading codes with a mutually orthogonal pilot symbol being added to a common pilot channel transmitted by each antenna; and wherein

the at least one transceiver comprises in each radio receiver a despreader coupled to the antenna, a space-time rake combiner which receives outputs from the despreaders, a channel estimation function coupled to each of the antennas of the radio receivers which provides a channel estimation to the space-time rake combiner, a detector is coupled to outputs of the space-time rake combiner which provides outputs of the plurality of data streams, and a multiplexer, coupled to the outputs of the detector which outputs a multiplexed data stream corresponding to the input data stream.

65. (New) The terminal in accordance with claim 62, wherein the station comprises a demultiplexer which demultiplexes an input data stream into a plurality of substreams, each substream is spread with one of a plurality of spreading codes with a mutually orthogonal pilot symbol being added to a common pilot channel transmitted by each antenna; and wherein

the at least one transceiver comprises in each radio receiver a despreader coupled to the antenna, a space-time rake combiner which receives outputs from the despreaders, a channel estimation function coupled to each of the antennas of the radio receivers which provides a channel estimation to the space-time rake combiner, a detector is coupled to outputs of the space-time rake combiner which provides outputs of the plurality of data streams, and a multiplexer, coupled to the outputs of the detector which outputs a multiplexed data stream corresponding to the input data stream.

66. (New) The terminal in accordance with claim 61, wherein the terminal uses wide band code division multiple access (WCDMA) for receiving the plurality of encoded streams.

67. (New) The terminal in accordance with claim 61, wherein the terminal uses global system for mobile communications (GSM) for receiving the plurality encoded data streams.

68. (New) The terminal in accordance with claim 62, wherein the terminal uses wide band code division multiple access (WCDMA) for receiving the plurality of encoded data streams and the another system uses global system for mobile communications (GSM).

69. (New) The terminal in accordance with claim 62, wherein the terminal uses global system for mobile communications (GSM) for receiving the plurality of encoded data streams and the another system uses wide band code division multiple access (WCDMA).

70. (New) The terminal in accordance with claim 1, wherein the radio indicator comprises pilot signal power.

71. (New) The terminal in accordance with claim 1, wherein the radio indicator comprises total received signal power.

72. (New) The terminal in accordance with claim 1, wherein the radio indicator comprises $E_c/10$.

73. (New) The terminal in accordance with claim 1, wherein the radio indicator comprises cell identification.

74. (New) A terminal controller comprising:
a controlling unit for controlling at least one radio transceiver of a terminal in a data transmission system, the data transmission system including a station which

transmits a plurality of encoded data streams using a plurality of antennas to the terminal and a station controller which controls the station,

in response to a transmission from the station that the terminal is to operate at least one of a plurality of radio receivers in at least one radio transceiver of the terminal in at least one frequency band not used to receive the plurality of encoded data streams during at least one identified data frame therein to measure a radio indicator of the at least one frequency band not used to receive the plurality of encoded data streams, a processing unit for causing at least one of the radio receivers to be tuned to the at least one frequency band during the at least one identified data frame, to make measurements therein, for transmitting the measurements with at least one transmitter of at least one radio transceiver to the station and for adjusting the meaning of feedback sent in an uplink direction accordingly to correspond to a resulting less than the plurality data streams prior to a resulting non-MIMO transmission,

wherein the at least one radio transceiver includes a plurality of radio receivers and the at least one transmitter, each radio receiver including an antenna which receives the plurality of encoded data streams and a detecting function which decodes the plurality of encoded data streams into decoded data.

75. (New) A method comprising:

controlling, in a terminal controller, at least one radio transceiver of a terminal in a data transmission system, the data transmission system including a station which

transmits a plurality of encoded data streams using a plurality of antennas to the terminal and a station controller which controls the station;

in response to a transmission from the station that the terminal is to operate at least one of the radio receivers in at least one frequency band not used to receive the plurality of encoded data streams during at least one identified data frame therein to measure a radio indicator of the at least one frequency band not used to receive the plurality encoded data streams, causing at least one of the radio receivers to be tuned to the at least one frequency band during the at least one identified data frame, to make measurements therein;

transmitting the measurements with the at least one transmitter of the at least one radio transceiver to the station; and

adjusting the meaning of feedback sent in an uplink direction accordingly to correspond to a resulting less than the plurality of data streams prior to a resulting non-MIMO transmission.

76. (New) A data transmission system, comprising:

a terminal;

a station which transmits a plurality of encoded data streams using a plurality of antennas to the terminal;

a station controller which controls the station;

the terminal including at least one radio transceiver including a plurality of receivers and at least one transmitter, each radio receiver including an antenna which receives the plurality of encoded data streams and a detecting function which decodes the plurality of encoded data streams into decoded data; and

a terminal controller which controls the at least one radio transceiver; and wherein in response to a transmission from the station that the terminal is to operate at least one of the radio receivers in at least one frequency band not used to receive the plurality of data streams during at least one identified data frame therein to measure a radio indicator of the at least one frequency band not used to receive the plurality of encoded data streams, the terminal controller causes at least one of the radio receivers to be tuned to the at least one frequency band during the at least one identified data frame and to make measurements of the radio energy therein, to transmit the measurements with the at least one transmitter of the at least one radio transceiver to the station and to adjust the meaning of feedback sent in an uplink direction accordingly to correspond to a resulting less than the plurality of data streams prior to a resulting non-MIMO transmission.

77. (New) An apparatus comprising:

a control unit for controlling at least one radio transceiver of a terminal in a data transmission system, the data transmission system including a station which transmits a plurality of encoded data streams using a plurality of antennas to the terminal and a station controller which controls the station;

in response to a transmission from the station that the terminal is to operate at least one of a plurality of radio receivers in at least one radio transceivers of the terminal in at least one frequency band not used to receive the plurality of encoded data streams during at least one identified data frame therein to measure a radio indicator of the at least one frequency band not used to receive the plurality of encoded data streams, processing means for causing at least one of the radio receivers to be tuned to the at least one frequency band during the at least one identified data frame and to make measurements therein,

transmitting means for transmitting the measurements with at least one transmitter of at least one radio transceiver to the station, and

adjusting means for adjusting the meaning of feedback sent in an uplink direction accordingly to correspond to a resulting less than the plurality of data streams prior to a resulting non-MIMO transmission.

78. (New) A network node in a station of a data transmission system, the network node comprising:

a transmitting unit for transmitting a plurality of encoded data streams using a plurality of antennas to a terminal and a station controller which controls the station;

wherein the terminal comprises at least one radio transceiver including a plurality of radio receivers and at least one transmitter, each radio receiver including an antenna which receives the plurality of encoded data streams and a detecting function which

decodes the plurality of encoded data streams into decoded data and a terminal controller which controls the at least one radio transceiver, and

wherein in response to a transmission from the station that the terminal is to operate at least one of the radio receivers in at least one frequency band not used to receive the plurality of encoded data streams during at least one identified data frame therein to measure a radio indicator of the at least one frequency band not used to receive the plurality of encoded data streams, the terminal controller causes at least one of the radio receivers to be tuned to the at least one frequency band during the at least one identified data frame and to make measurements therein, to transmit the measurements with the at least one transmitter of the at least one radio transceiver to the station and to adjust the meaning of feedback sent in an uplink direction accordingly to correspond to a resulting less than the plurality of data streams prior to a resulting non-MIMO transmission.